Committed to the Future of Rural Communities

4280-B APPENDIX A GEOTHERMAL, DIRECT USE

TECHNICAL REPORTS FOR PROJECTS WITH TOTAL ELIGIBLE PROJECT COSTS OF $200,000 OR LESS

The Technical Report for projects with total eligible project costs of $200,000 or less must demonstrate that the project design, procurement, installation, startup, operation, and maintenance of the renewable energy system or energy efficiency improvement will operate or perform as specified over its design life in a reliable and a cost-effective manner. The Technical Report must also identify all necessary project agreements, demonstrate that those agreements will be in place, and that necessary project equipment and services are available over the design life.

All technical information provided must follow the format specified in Sections 1 through 10 of this appendix. Supporting information may be submitted in other formats. Design drawings and process flowcharts are encouraged as exhibits. A discussion of each topic is not necessary if the topic is not applicable to the specific project. Questions identified in the Agency's technical review of the project must be answered to the Agency's satisfaction before the application will be approved. The applicant must submit the original technical report plus one copy to the Rural Development State Office. Depending on the level of engineering required for the specific project or if necessary to ensure public safety, the services of a licensed professional engineer or a team of licensed professional engineers may be required.

Section 4. Geothermal, Direct Use

The technical requirements specified in this section apply to direct use geothermal projects, which are, as defined in § 4280.103, systems that use thermal energy directly from a geothermal source.

(a) Qualifications of key project service providers. List all key project service providers. If one or more licensed professionals are involved in the project, provide the credentials for each professional.

(b) Agreements, permits, and certifications.

(1) Identify all necessary agreements and permits required for the project and the status and schedule for securing those agreements and permits, including any permits or agreements required for well construction and for disposal or re-injection of cooled geothermal waters and the schedule for securing those agreements and permits.

(2) Identify all environmental issues, including any compliance issues associated with or expected as a result of the project on Form RD 1940-20, "Request for Environmental Information," and in compliance with 7 CFR part 1940, subpart G, of this title.

(c) Resource assessment. Provide adequate and appropriate evidence of the availability of the renewable resource required for the system to operate as designed. Indicate the quality of the geothermal resource, including

temperature, flow, and sustainability and what direct use system is to be installed. Describe any special handling of cooled geothermal waters that may be necessary. Describe the process for determining the geothermal resource, including measurement setup for the collection of the geothermal resource data. For proposed projects with an established resource, provide a summary of the resource and the specifications of the measurement setup.

(d) Design and engineering. Applicants must submit a statement certifying that their project will be designed and engineered so as to meet the intended purpose, will ensure public safety, and will comply with applicable laws, regulations, agreements, permits, codes, and standards. In addition, applicants must:

(1) Provide authoritative evidence that the system will be designed and engineered so as to meet its intended purpose;

(2) List possible suppliers and models of major pieces of equipment;

(3) Provide a description of the components, materials, or systems to be installed. Include the location of the project;

(4) Provide one-line diagram for the electrical interconnection. Provide diagrams or schematics as required showing all major installed structural, mechanical, and electrical components of the system;

(5) Describe the expected thermal energy production of the proposed system as rated and as expected in actual field conditions. Describe the uses of, or the market for, heat produced by the system; and

(6) Describe the project site and address issues such as proximity to the load, unique safety concerns, and whether special circumstances exist.

(e) Project development schedule. Provide a project schedule in an appropriate level of detail that will demonstrate the project can be adequately managed and be able to identify impacts of any delays on the project completion. The applicant must submit a statement certifying that the project will be completed within 2 years from the date of approval.

(f) Project economic assessment. Provide an analysis of the proposed project to demonstrate its financial performance, including the calculation of simple payback. The analysis should include applicable investment incentives, productivity incentives, loans and grants, and expected energy offsets or sales on a monthly and annual basis. In addition, provide other information necessary to assess the project’s cost effectiveness.

(g) Equipment procurement. Include a statement from the applicant certifying that “open and free” competition will be used for the procurement of project components in a manner consistent with the requirements of 7 CFR part 3015 of this title.

(h) Equipment installation. The project must be installed in accordance with applicable local, State, and national building and electrical codes and regulations. Include a statement from the applicant certifying that equipment installation will be made in accordance with all applicable safety and work rules. Upon successful system installation and following established operation, the successful applicant must deliver invoices and evidence of payment.

(i) Operations and maintenance. Identify any unique operations and maintenance requirements of the project necessary for the system to operate as designed over the design life. State the design life of the system.

(1) Provide information on all system warranties. A minimum 3-year warranty for equipment and a 10-year warranty on design are expected.

(2) If the project has any unique operation and maintenance issues, describe them.

(j) Dismantling and disposal of project components. Describe a plan for dismantling and disposing of project components and associated wastes at the end of their useful lives.